

CLAIMS

What is claimed:

- 5 1. A process for the manufacture of laminated wood composites comprising the steps of:
 - (a) providing a plurality of wood veneers;
 - (b) providing an organic polyisocyanate laminating adhesive;
 - (c) providing a ribbon coating apparatus;
 - (d) providing a pressing means;
 - 10 (e) conveying at least one of the plurality of wood veneers through the ribbon coating apparatus and applying a layer of the organic polyisocyanate laminating adhesive in liquid form to a face of the at least one wood veneer in a single pass through the ribbon coating apparatus to obtain a liquid polyisocyanate coated veneer;
 - (f) placing at least one of the liquid polyisocyanate coated veneers in contact with at least
15 one other veneer to form a loose stack of veneers;
 - (g) pressing the loose stack of veneers in the pressing means under conditions suitable to cause the polyisocyanate laminating adhesive to at least partially cure to form an adhesive bonded wood laminate; and
 - (h) removing the adhesive bonded wood laminate from the pressing means.
- 20 2. The process according to claim 1 wherein the pressing is conducted within a temperature range of from 10°C to 50°C.
3. The process according to claim 2 wherein the plurality of wood veneers each has a
25 moisture content of less than 20% by weight, relative to the total weight of the veneer.
4. The process according to claim 1 wherein the plurality of wood veneers each has a moisture content of less than 20% by weight, relative to the total weight of the veneer.

5. The process according to claim 4 wherein the pressing is conducted within a temperature range of from 10°C to 50°C.
6. The process according to claim 1 wherein the organic polyisocyanate laminating adhesive is a one component moisture curing quasiprepolymer comprising at least one -N=C=O group terminated prepolymer derived from the reaction of an aliphatic tertiary amine initiated polyether polyol with a molar excess of one or more monomeric polyisocyanate species of the MDI series; and wherein said quasiprepolymer further contains, in unreacted form, some monomeric polyisocyanate species of the MDI series.
7. The process according to claim 2 wherein the organic polyisocyanate laminating adhesive is a one component moisture curing quasiprepolymer comprising at least one -N=C=O group terminated prepolymer derived from the reaction of an aliphatic tertiary amine initiated polyether polyol with a molar excess of one or more monomeric polyisocyanate species of the MDI series; and wherein said quasiprepolymer further contains, in unreacted form, some monomeric polyisocyanate species of the MDI series.
8. The process according to claim 6 wherein the aliphatic tertiary amine initiated polyether polyol contains a plurality of oxyethylene groups.
9. The process according to claim 7 wherein the aliphatic tertiary amine initiated polyether polyol contains a plurality of oxyethylene groups.
10. The process according to claim 8 wherein the aliphatic tertiary amine initiated polyether polyol is prepared from the reaction of a polyfunctional aliphatic amine initiator with ethylene oxide and propylene oxide.
11. The process according to claim 9 wherein the aliphatic tertiary amine initiated polyether polyol is prepared from the reaction of a polyfunctional aliphatic amine initiator with ethylene oxide and propylene oxide.

12. The process according to claim 10 wherein the polyfunctional aliphatic amine initiator consists essentially of ethylene diamine.

5 13. The process according to claim 11 wherein the polyfunctional aliphatic amine initiator consists essentially of ethylene diamine.

14. The process according to claim 6 wherein the one component moisture curing quasiprepolymer has a free -N=C=O group concentration in the range of from 10 to 29% by weight, a number average -N=C=O group functionality of greater than 2, and a viscosity at 25°C in the range of from 200 to 10,000 cps.

10 15. The process according to claim 7 wherein the one component moisture curing quasiprepolymer has a free -N=C=O group concentration in the range of from 10 to 29% by weight, a number average -N=C=O group functionality of greater than 2, and a viscosity at 25°C in the range of from 200 to 10,000 cps.

16. The process according to claim 14 wherein the pressing is conducted within a temperature range of from 15°C to 30°C.

20 17. The process according to claim 15 wherein the pressing is conducted within a temperature range of from 15°C to 30°C.

18. A laminated wood product produced according to the process of claim 1.

25 19. The laminated wood product of claim 18 wherein the total amount of organic polyisocyanate laminating adhesive in the laminated wood product is from about 0.25 to 1% by weight.

30 20. A laminated wood product produced according to the process of claim 3.